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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,242	10/16/2003	Jeffrey H. Hunt	024.0035	2466
29906	7590	10/24/2005	EXAMINER	
INGRASSIA FISHER & LORENZ, P.C. 7150 E. CAMELBACK, STE. 325 SCOTTSDALE, AZ 85251			MENEFEE, JAMES A	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/688,242

Applicant(s)

HUNT ET AL.

Examiner

James A. Menefee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/16/2003
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed 10/16/2003 has been considered as noted on the attached signed copy. Note that several references are crossed out; this is because they have been improperly numbered. However, the examiner has considered these references and placed them on the attached PTO-892, therefore they will be listed on any patent that ultimately issues from this application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Marshall (US 3,643,178).

Regarding claim 11, Marshall discloses a birefringent lens (12a, 12b, or 13a, 13b of Fig. 1, or 68 of Fig. 6) having a substantially curved exterior surface configured to focus light and where the lens comprises an optically active material configured to adjust polarization of light passing through.

Regarding claims 12-13, these birefringent elements may be made of calcite or quartz. See abstract; col. 2 l. 27; col. 9 ll. 17-19.

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Regarding claims 14-15, the lens may have convex and concave curved surfaces 69,70 as in Fig. 6. See col. 8 ll. 29-31.

Regarding claim 16, Marshall discloses a laser comprising first and second mirrors (9a,9b of Fig. 1, or 64,66 of Fig. 6) having reflective surfaces, a gain medium 8 or 72 between the reflective surfaces and configured to produce laser light, and the integrated birefringent lens as claimed (see rejection of claim 11 above) between the gain medium and second mirror.

Regarding claims 17-18, there may be a second birefringent lens between the gain medium and first mirror (there may be one on each side of the gain medium).

Regarding claims 19-20, the lens materials are disclosed. See rejection of claims 12-13 above.

Claims 11-13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Lundstrom (US 4,461,009).

Regarding claim 11, Lundstrom discloses in Fig. 2 a birefringent lens 12 for a laser, the lens having a substantially curved exterior surface (col. 2 ll. 10-12) to focus light passing through, and comprising an optically active material (col. 2 l. 9) to adjust the polarization of light passing through.

Regarding claims 12-13, the material may be calcite or quartz. Col. 2 l. 9.

Regarding claim 16, Lundstrom discloses in Fig. 2 a laser comprising first and second mirrors 22,24 having reflective surfaces, a gain medium 20 disposed between the reflective surfaces adjacent first mirror 22 and configured to produce laser light, and an integrated birefringent lens 12 displaced between the gain medium and second mirror 24 comprising an

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optically active material and a curved surface (see rejection of claim 11 above) for simultaneously affecting polarization and focus of light passing there through.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8, and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall in view of Pang (US 2003/0227957).

Regarding claims 1 and 10, the claims are essentially the same or broader than claim 16, therefore the limitations are disclosed by Marshall as in the rejection of claim 16 above. Except it is not disclosed that the resonator is a resonator "chamber." Pang teaches that a solid-state laser system may be included in an enclosure or chamber. The entire document is relevant. It would have been obvious to one skilled in the art to include the laser system of Marshall in an enclosure so that harmful contaminants can be removed, as taught by Pang.

Regarding claims 2-6, the materials and curved surface are disclosed by Marshall, see the above rejections of claims 11-14.

Regarding claim 8, Marshall's gain medium is a solid-state rod.

Claims 1-5, 8, and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Lundstrom in view of Pang.

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Regarding claims 1 and 10, the claims are essentially the same or broader than claim 16, therefore the limitations are disclosed by Lundstrom as in the rejection of claim 16 above. Except it is not disclosed that the resonator is a resonator "chamber." But this is taught with motivation by Pang as shown in the rejections of claims 1 and 10 above over Marshall in view of Pang.

Regarding claims 2-5, the materials and curved surface are disclosed by Lundstrom, see the above rejections of claims 11-13.

Regarding claim 8, Lundstrom's gain medium is a solid-state rod.

Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Marshall or Lundstrom and Pang as applied to claim 1 above, and further in view of the admitted prior art. Either Marshall or Lundstrom along with Pang teach the limitations of parent claim 1, but do not teach that the gain medium is a disk or slab. Such gain media are known in the art, as indicated by applicant's admitted prior art. See par. [0003]. It would have been obvious to one skilled in the art to choose between a disk or slab (and the rod of the references) as a matter of design choice depending on the pumping mechanism and whether the output is designed to optimize output power, efficiency, or beam propagation characteristics, as taught in the admitted prior art.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See (WO 81/02224) also discloses birefringent lenses 7,8 located within a laser

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cavity. As noted above, the other references cited by the examiner were on applicant's IDS and are cited to correct the numbering.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (571) 272-1944. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James Menefee  
October 19, 2005